

AGREEMENT

CONCERNING THE ADOPTION OF UNIFORM CONDITIONS OF APPROVAL AND RECIPROCAL RECOGNITION OF APPROVAL FOR MOTOR VEHICLE EQUIPMENT AND PARTS

done at Geneva on 20 March 1958

Addendum 1: Regulations No. 1 and No. 2 annexed to the Agreement

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For Regulation No. 2, the 03 series of amendments — Date of entry into force: 9 March 1986

Regulation No. 1: UNIFORM PROVISIONS CONCERNING THE APPROVAL OF MOTOR VEHICLE HEADLAMPS EMITTING AN ASYMMETRICAL PASSING BEAM AND/OR A DRIVING BEAM AND EQUIPPED WITH FILAMENT LAMPS OF CATEGORY R2

Regulation No. 2: UNIFORM PROVISIONS CONCERNING THE APPROVAL OF INCANDESCENT ELECTRIC LAMPS FOR HEADLAMPS EMITTING AN ASYMMETRICAL PASSING BEAM OR A DRIVING BEAM OR BOTH

*In this text also appear the modifications which are subject to the depositary notification C.N.27.1988.TREATIES-10 dated 18 March 1988.



UNITED NATIONS

Regulation No. 1

UNIFORM PROVISIONS CONCERNING THE APPROVAL OF MOTOR VEHICLE
HEADLAMPS EMITTING AN ASYMMETRICAL PASSING BEAM AND/OR A
DRIVING BEAM AND EQUIPPED WITH FILAMENT LAMPS OF CATEGORY R2

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Regulation No. 2

UNIFORM PROVISIONS CONCERNING THE APPROVAL OF INCANDESCENT
ELECTRIC LAMPS FOR HEADLAMPS EMITTING AN ASYMMETRICAL PASSING
BEAM OR A DRIVING BEAM OR BOTH

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Regulation No. 1

UNIFORM PROVISIONS CONCERNING THE APPROVAL OF MOTOR VEHICLE
HEADLAMPS EMITTING AN ASYMMETRICAL PASSING BEAM AND/OR A
DRIVING BEAM AND EQUIPPED WITH FILAMENT LAMPS OF CATEGORY R2

1. DEFINITION OF "TYPE"

The expression "different types of headlamp" means headlamps which differ intrinsically in matters such as:

- 1.1. The trade name or mark;
- 1.2. The characteristics of the optical system;
- 1.3. The inclusion of additional components capable of altering the optical effects by reflection, refraction or absorption;
- 1.4. Suitability for right-hand or left-hand traffic or for both traffic systems;
- 1.5. Ability to provide a passing beam or a driving beam or both.

2. APPLICATION FOR APPROVAL 1/

- 2.1. The application for approval shall be submitted by the owner of the trade name or mark or by his duly accredited representative. It shall specify:

Whether the headlamp is intended to provide both a passing beam and a driving beam or only one of these beams;

Whether, if the headlamp is intended to provide a passing beam, it is designed for both left-hand and right-hand traffic or for either left-hand or right-hand traffic only.

- 2.2. The application shall be accompanied, in respect of each type of headlamp, by:
 - 2.2.1. Drawings in triplicate, sufficiently detailed to permit identification of the type and showing the headlamps in plan, with details of the fluting, if any, of the lens, and in lateral elevation; the drawings shall show the position intended for the approval number and class indicator(s) in relation to the circle of the approval mark;
 - 2.2.2. A brief technical specification;
 - 2.2.3. Two samples

1/ Application for approval of a filament lamp: see Regulation No. 37.

3. MARKINGS 2/

- 3.1. Headlamps submitted for approval shall bear the trade name or mark of the applicant.
- 3.2. They shall include, on the lens and on the main body, 3/ spaces of sufficient size to accommodate the approval marking and the additional symbols provided for in paragraph 4; these spaces must be shown on the drawings referred to in paragraph 2.2.1. above.
- 3.3. In the case of headlamps designed to satisfy the requirements both of countries with right-hand traffic and of countries with left-hand traffic, the two settings of the optical unit on the vehicle or of the filament lamp on the reflector shall be marked by the capital letters R and D, and L and G, respectively.
- 3.4. In every case the relevant operating mode used during the test procedure according to paragraph 1.1.1.1. of annex 4 and the permitted voltage(s) according to paragraph 1.1.1.2. of annex 4 shall be stipulated on the communication form transmitted to the countries which are Contracting Parties to the Agreement and which apply this Regulation.

In the corresponding cases the device shall be marked as follows:

On units meeting the requirements of this Regulation which are so designed that the filament of the passing beam shall not be lit simultaneously with that of any other lighting function with which it may be reciprocally incorporated:

an oblique stroke (/) shall be placed behind the passing lamp symbol in the approval mark.

On units meeting the requirements of annex 4 to this Regulation only when supplied with a voltage of 6 V or 12 V, a symbol consisting of the number 24 crossed out by an oblique cross (X), shall be placed near the filament lamp holder.

- 3.5. The markings shall be clearly legible and indelible.

2/ In the case of headlamps designed to meet the requirements of traffic moving on one side of the road only (either right or left), it is further recommended that the area which can be occulted to prevent discomfort to users in a country where traffic moves on the opposite side of the road should be outlined indelibly on the front lens. This marking is not necessary, however, where the area is clearly apparent from the design.

3/ If the lens cannot be separated from the main body of the headlamp, the provision of a marking area on the glass will suffice.

4. APPROVAL

4.1. General

- 4.1.1. If the two headlamp type samples submitted in accordance with paragraph 2 above satisfy the provisions of this Regulation, approval shall be granted.
- 4.1.2. Where grouped, combined or reciprocally incorporated lamps have been found to comply with the requirements of several Regulations annexed to the 1958 Agreement, a single international approval mark may be applied provided that such lamps are not grouped, combined or reciprocally incorporated with a lamp or lamps not satisfying any one of these Regulations.
- 4.1.3. An approval number shall be assigned to each type approved. Its first two digits (at present 01 corresponding to the 01 series of amendments which entered into force on 18 March 1986) shall indicate the series of amendments incorporating the most recent major technical amendments made to the Regulation at the time of issue of the approval. The same Contracting Party may not assign the same number to another type of grouped, combined or reciprocally incorporated lamps covered by this Regulation.
- 4.1.4. Notice of approval or of extension or refusal of approval of a type of headlamp pursuant to this Regulation shall be communicated to the Parties to the 1958 Agreement applying this Regulation, by means of a form conforming to the model shown in annex 1 to this Regulation.
- 4.1.5. Every headlamp conforming to a type approved under this Regulation shall bear, in the space referred to in paragraph 3.2 above, in addition to the marking prescribed in paragraph 3.1 an approval mark as described in paragraphs 4.2 and 4.3 below.
- 4.2. Composition of the approval mark
- The approval mark shall consist of:
- 4.2.1. an international approval marking, consisting of
- 4.2.1.1. a circle surrounding the letter "E" followed by the distinguishing number of the country which has granted approval; 4/

4/ 1 for the Federal Republic of Germany, 2 for France, 3 for Italy, 4 for the Netherlands, 5 for Sweden, 6 for Belgium, 7 for Hungary, 8 for the Czech and Slovak Federal Republic, 9 for Spain, 10 for Yugoslavia, 11 for the United Kingdom, 12 for Austria, 13 for Luxembourg, 14 for Switzerland, 15 for the German Democratic Republic, 16 for Norway, 17 for Finland, 18 for Denmark, 19 for Romania, 20 for Poland, 21 for Portugal and 22 for the Union of Soviet Socialist Republics. Subsequent numbers will be assigned to other countries in the chronological order in which they ratify or accede to the Agreement concerning the Adoption of Uniform Conditions of Approval and Reciprocal Recognition of Approval for Motor Vehicle Equipment and Parts, and the numbers thus assigned shall be communicated to the Contracting Parties to the Agreement by the Secretary-General of the United Nations.

- 4.2.1.2. the approval number prescribed in paragraph 4.1.3 above.
- 4.2.2. the following additional symbol (or symbols):
 - 4.2.2.1. on headlamps meeting left-hand traffic requirements only, a horizontal arrow, pointing to the right of an observer facing the headlamp, i.e. to the side of the road on which the traffic moves;
 - 4.2.2.2. on headlamps designed to meet the requirements of both traffic systems by means of an appropriate adjustment of the setting of the optical unit or the filament lamp, a horizontal arrow with a head on each end, the heads pointing respectively to the left and to the right;
 - 4.2.2.3. on headlamps meeting the requirements of this Regulation in respect of the passing beam only, the letter "C";
 - 4.2.2.4. on headlamps meeting the requirements of this Regulation in respect of the driving beam only, the letter "R";
 - 4.2.2.5. on headlamps meeting the requirements of this Regulation in respect of both the passing beam and the driving beam, the letters "CR";
 - 4.2.2.6. In every case the relevant operating mode used during the test procedure according to paragraph 1.1.1.1 of annex 4 and the permitted voltage(s) according to paragraph 1.1.1.2 of annex 4 shall be stipulated on the approval certificate and on the communication form transmitted to the countries which are Contracting Parties to the Agreement and which apply this Regulation.

In the corresponding cases the device shall be marked as follows:

On headlamps meeting the requirements of this Regulation which are so designed that the filament of the passing beam shall not be lit simultaneously with that of any other lighting function with which it may be reciprocally incorporated: an oblique stroke (/) shall be placed behind the passing lamp symbol in the approval mark.

On headlamps meeting the requirements of annex 4 to this Regulation only when supplied with a voltage of 6 V or 12 V, a symbol consisting of the number 24 crossed out by an oblique cross (X), shall be placed near the filament lamp holder.

- 4.2.2.7. The two digits of the approval number which indicate the series of amendments in force at the time of issue of the approval and, if necessary, the required arrow may be marked close to the above additional symbols.

- 4.2.2.8. The marks and symbols referred to in paragraphs 4.2.1 and 4.2.2 above shall be clearly legible and be indelible even when the device is fitted in the vehicle.

4.3. Arrangement of the approval mark

4.3.1. Independant lamps

Annex 5, figures 1 to 9, to this Regulation gives examples of arrangements of the approval marks with the above-mentioned additional symbols.

4.3.2. Grouped, combined or reciprocally incorporated lamps

- 4.3.2.1. Where grouped, combined or reciprocally incorporated lamps have been found to comply with the requirements of several Regulations, a single international approval mark may be affixed, consisting of a circle surrounding the letter "E" followed by the distinguishing number of the country which has granted the approval, and an approval number. This approval mark may be located anywhere on the grouped, combined or reciprocally incorporated lamps, provided that:

- 4.3.2.1.1. it is visible after their installation;

- 4.3.2.1.2. no part of the grouped, combined or reciprocally incorporated lamps that transmits light can be removed without at the same time removing the approval mark.

- 4.3.2.2. The identification symbol for each lamp appropriate to each Regulation under which approval has been granted, together with the corresponding series of amendments incorporating the most recent major technical amendments to the Regulation at the time of issue of the approval and, if necessary, the required arrow shall be marked:

- 4.3.2.2.1. either on the appropriate light-emitting surface,

- 4.3.2.2.2. or in a group, in such a way that each of the grouped, combined or reciprocally incorporated lamps may be clearly identified (see three possible examples in annex 5).

- 4.3.2.3. The size of the components of a single approval mark shall not be less than the minimum size required for the smallest of the individual marks by the Regulation under which approval has been granted.

- 4.3.2.4. An approval number shall be assigned to each type approved. The same Contracting Party may not assign the same number to another type of grouped, combined or reciprocally incorporated lamps covered by this Regulation.

- 4.3.2.5. Annex 5, figure 10, to this Regulation gives examples of arrangements of approval marks for grouped, combined or reciprocally incorporated lamps with all the above-mentioned additional symbols.

- 4.3.3. Lamps reciprocally incorporated with other lamps, of which the lens may also be used for other types of headlamps

The provisions laid down in paragraph 4.3.2 above are applicable.

- 4.3.3.1. In addition, where the same lens is used, the latter may bear the different approval marks relating to the different types of headlamps or units of lamps, provided that the main body of the headlamp, even if it cannot be separated from the lens, also comprises the space described in paragraph 3.1 above and bears the approval marks of the actual functions. If different types of headlamps comprise the same main body, the latter may bear the different approval marks.

- 4.3.3.2. Annex 5, figure 11, to this Regulation gives examples of approval marks relating to the above case.

5. GENERAL SPECIFICATIONS

- 5.1. Each sample shall conform to the specifications set forth in paragraphs 6 and 7 below.
- 5.2. Headlamps shall be so made as to retain their prescribed photometric characteristics and to remain in good working order when in normal use, in spite of the vibrations to which they may be subjected.
- 5.3. Headlamps shall be fitted with a device enabling them to be so adjusted on the vehicle as to comply with the rules applicable to them. Such a device need not be fitted on components in which the reflector and the diffusing lens cannot be separated provided the use of such units is confined to vehicles on which the headlamps setting can be adjusted by other means. Where a headlamp providing a driving beam and a headlamp providing a passing beam, each equipped with its own filament lamp, are assembled to form a composite unit, the adjusting device shall enable each optical system individually to be duly adjusted.

However, this shall not apply to headlamps assemblies whose reflectors are indivisible. For this type of assembly, the requirements of paragraph 6 below shall apply.

- 5.4. The components by which the filament lamp is fixed to the reflector shall be so made that, even in darkness, the filament lamp can be fixed in no position but the correct one.

- 5.5. Headlamps designed to satisfy the requirements both of countries in which traffic moves on the right and of those in which it moves on the left may be adapted for traffic on a given side of the road either by an appropriate initial adjustment when the vehicle is fitted out or by selective setting by the driver. Such initial adjustment or selective setting shall consist, for example, of fixing either the optical unit at a given angle on the vehicle or the filament lamp at a given angle in relation to the optical unit. In all cases, only two precisely differentiated setting positions, one for right-hand and one for left-hand traffic, shall be possible, and the design shall preclude inadvertent shifting of the headlamp from one position to another or its setting in an intermediate position. Where two different setting positions are provided for the filament lamp, the components attaching the filament lamp to the reflector must be so designed and manufactured that, in each of its two settings, the filament lamp will be held in position with the precision required for headlamps intended for traffic on only one side of the road.
- 5.6. Complementary tests shall be done according to the requirements of annex 4 to ensure that in use there is no excessive change in photometric performance.
- 5.7. Conformity with the requirements of paragraphs 5.2 to 5.5 shall be verified visually and, where necessary, by a test fitting.

6. ILLUMINATION

- 6.1. Headlamps shall be so made that the passing-beam filaments of suitable filament lamps give adequate illumination without dazzle, while the driving-beam filaments of suitable filament lamps also give good illumination.

The illumination produced by the headlamp shall be checked on a vertical screen set at a distance of 25 m in front of the headlamp and at right angles to its axis (see annex 6 to this Regulation), and with a standard filament lamp designed for a nominal voltage of 12 V, having a smooth and colourless bulb, and exhibiting the following characteristics at that voltage:

	Consumption in watts	Light flux of lumens
Passing-beam filament	40 ± 5%	450 ± 10%
Driving-beam filament	45 + 0% - 10%	700 ± 10%

The dimensions determining the position of the filaments inside the standard filament lamp are shown on the relevant filament lamp data sheet of Regulation No. 37.

- 6.2. The passing beam must produce a sufficiently sharp "cut-off" to permit of satisfactory adjustment with its aid. The "cut-off" must be a horizontal straight line on the side opposite to the direction of the traffic for which the headlamp is intended; on the other side it should be horizontal or within an angle of 15° above the horizontal.

The headlamp shall be so adjusted that:

- 6.2.1. in the case of headlamps designed to meet the requirements of right-hand traffic, the "cut-off" on the left half of the screen ^{5/} is horizontal and, in the case of headlamps designed to meet the requirements of left-hand traffic, the "cut-off" on the right half of the screen is horizontal;
- 6.2.2. this horizontal part of the "cut-off" is situated on the screen 25 cm below the outline of the horizontal plane passing through the focus of the headlamp (see annex 6 to this Regulation);
- 6.2.3. the screen is in the position indicated in annex 6. ^{6/}

When so adjusted, the headlamp shall, if it is intended to provide a passing beam and a driving beam, comply with the requirements referred to in paragraphs 6.3 and 6.4 below. If it is intended primarily to provide a passing beam, it need comply only with the requirements referred to in paragraph 6.3. ^{7/}

Where a headlamp so adjusted does not meet the requirements referred to in paragraphs 6.3 and 6.4, its adjustment may be changed, provided that the axis of the beam or the point of intersection HV specified in annex 6 to this Regulation is not laterally displaced by more than 1° (=44 cm) to the right or left. ^{8/} To facilitate adjustment by means of the "cut-off", the headlamp may be partially occulted in order to sharpen the "cut-off".

^{5/} The adjustment screen should be sufficiently wide to allow examination of the "cut-off" over a range of at least 5° from the line vv.

^{6/} If, in the case of a headlamp designed to satisfy the requirements of this Regulation with respect to the passing beam only, the focal axis diverges appreciably from the general direction of the beam, lateral adjustment shall be effected to the manner which best satisfies the requirements for illumination at points 75 and 50.

^{7/} A "passing beam" headlamp of this kind may incorporate a driving beam for which no specifications are laid down.

^{8/} The limit of non-adjustment of 1° to the right or left is not incompatible with vertical non-adjustment. The latter is limited only by the requirements of paragraph 6.4.

If the headlamp is designed solely to provide a driving beam, it shall be so adjusted that the area of maximum illumination is centred on the point of intersection of the lines hh and vv. Such a headlamp need meet only the requirements referred to in paragraph 6.4.

- 6.3. The illumination produced on the screen by the passing beam shall meet the requirements of the following table: 2/

Point on measuring screen		Required illumination in lux
Headlamps for right-hand traffic	Headlamps for left-hand traffic	
Point B 50 L	Point B 50 R	≤ 0.3
" 75 R	" 75 L	≥ 6
" 50 R	" 50 L	≥ 6
" 25 L	" 25 R	≥ 1.5
" 25 R	" 25 L	≥ 1.5
Any point in zone III		≤ 0.7
" " " " IV		≥ 2
" " " " I		≤ 20

It is understood that, where the flux of the standard filament lamp used for measurement is other than 450 lumens, the measurements as taken will be corrected proportionally to the rates of the fluxes. There shall be no lateral variations detrimental to good visibility in any of the zones I, II, III and IV.

Headlamps designed to meet the requirements of both right-hand and left-hand traffic must, in each of the two setting positions of the optical unit or of the filament lamp, meet the requirements set forth above for the corresponding traffic system.

- 6.4 Measurements of the illumination produced on the screen by the driving beam shall be taken with the same headlamp adjustment as for measurements under 6.3 above, or, in the case of a headlamp providing a driving beam only, in accordance with the final paragraph of 6.2. In the case where more than one light source is used to provide the main beam, the combined functions shall be used to determine the maximum value of the illumination (E_M).

2/ See annex 2 on the subject of special headlamps for agricultural or forest tractors and other slow-moving vehicles.

The illumination produced on the screen by the driving beam shall meet the following requirements:

The point of intersection HV of the lines hh and vv shall be situated within the isolux 90% of maximum illumination.

This maximum value shall not be less than 32 lux.

Starting from point of intersection HV, horizontally to the right and left, illumination shall be not less than 16 lux up to a distance of 1.125 m and not less than 4 lux up to a distance of 2.25 m. (Where the flux of the standard filament lamp used for measurements is other than 700 lumens, the measurements as taken must be corrected proportionally to the ratio of the fluxes.)

- 6.5. The screen illumination values mentioned under paragraphs 6.3 and 6.4 above shall be measured by means of a photo-electric cell, the useful area of which shall be contained within a square of 65 mm side.

7. GAUGING OF DISCOMFORT

The discomfort caused by the passing beam of headlamps shall be gauged. 10/

8. STANDARD HEADLAMP

A headlamp shall be deemed to be a standard headlamp if it

- 8.1. Satisfies the above-mentioned requirements for approval;
- 8.2. Has an effective diameter of not less than 160 mm;
- 8.3. Provides with a standard filament lamp, at the various points and in the various areas referred to in paragraph 6.3 above, illumination equal to:
- 8.3.1. (i) not more than 90% of the maximum limits, and
- 8.3.2. (ii) not less than 120% of the minimum limits prescribed in the table in paragraph 6.3.

9. CONFORMITY OF PRODUCTION

Every headlamp bearing an approval mark provided for in this Regulation must conform to the approved type and meet the photometric conditions stated above. Verification of this requirement shall be effected in accordance with annex 3 and paragraph 3 of annex 4 to this Regulation.

10/ This requirement will be the subject of a recommendation for the benefit of administrations.

10. PENALTIES FOR NON-CONFORMITY OF PRODUCTION

- 10.1 The approval granted in respect of a headlamp pursuant to this Regulation may be withdrawn if the requirements specified above are not met or if a headlamp bearing the approval mark is not in conformity with the type approved.
- 10.2. If a Contracting Party to the Agreement applying this Regulation withdraws an approval it has previously granted, it shall forthwith so notify the other Contracting Parties applying this Regulation, by means of a communication form conforming to the model in annex 1 to this Regulation.

11. MODIFICATION AND EXTENSION OF APPROVAL OF A TYPE OF HEADLAMP

- 11.1 Every modification of the headlamp type shall be notified to the administrative department which approved the type of headlamp. The department may then either:
- 11.1.1. Consider that the modifications made are unlikely to have an appreciable adverse effect and that in any case the headlamp still complies with the requirements; or
- 11.1.2. Require a further test report from the technical service responsible for conducting the tests.
- 11.2. Confirmation or refusal of approval, specifying the alterations, shall be communicated by the procedure specified in paragraph 4.1.3 above to the Parties to the Agreement applying this Regulation.
- 11.3. The competent authority issuing the extension of approval shall assign a series number for such an extension and inform thereof the other Parties to the 1958 Agreement applying this Regulation by means of a communication form conforming to the model in annex 1 to this Regulation.

12. PRODUCTION DEFINITELY DISCONTINUED

If the holder of the approval completely ceases to manufacture a headlamp approved in accordance with this Regulation, he shall so inform the authority which granted the approval. Upon receiving the relevant communication that authority shall inform thereof the other Parties to the 1958 Agreement applying this Regulation by means of a communication form conforming to the model in annex 1 to this Regulation.

13. TRANSITIONAL PROVISIONS

- 13.1 As from the date of entry into force of the 01 series of amendments to this Regulation no Contracting Party applying it shall refuse to grant approvals under this Regulation as amended by the 01 series of amendments.

13.2. As from 24 months after the date of entry into force mentioned in paragraph 13.1 above, Contracting Parties applying this Regulation shall grant approvals only if the type of headlamp corresponds to the requirements of this Regulation as amended by the 01 series of amendments.

13.3. Existing approvals granted under this Regulation before the date mentioned in paragraph 13.2 above shall remain valid.

However, Contracting Parties applying this Regulation may prohibit the fitting of devices which do not meet the requirements of this Regulation as amended by the 01 series of amendments:

13.3.1. On vehicles for which type approval or individual approval is granted more than 24 months after the date of entry into force mentioned in paragraph 13.1 above.

13.3.2. On vehicles first registered more than five years after the date of entry into force mentioned in paragraph 13.1 above.

14. NAMES AND ADDRESSES OF TECHNICAL SERVICES RESPONSIBLE FOR
CONDUCTING APPROVAL TESTS AND OF ADMINISTRATIVE DEPARTMENTS

The Parties to the 1958 Agreement applying this Regulation shall communicate to the United Nations Secretariat the names and addresses of the technical services responsible for conducting approval tests and of the administrative departments which grant approval and to which forms certifying approval or extension or refusal or withdrawal of approval, issued in other countries, are to be sent.

Annex 1

(maximum format: A4 (210 x 297 mm))

COMMUNICATION



issued by:

Name of administration:

.....
.....
.....

concerning: 2/ APPROVAL GRANTED

APPROVAL EXTENDED

APPROVAL REFUSED

APPROVAL WITHDRAWN

PRODUCTION DEFINITELY DISCONTINUED

of a type of headlamp

pursuant to Regulation No. 1

Approval No ...

Extension No. ...

1. Trade name or mark of the device:
2. Manufacturer's name for the type of device:
3. Manufacturer's name and address:
4. If applicable, name and address of the
manufacturer's representative
5. Submitted for approval on:
6. Technical service responsible for conducting
approval tests:
7. Date of test report:

1/ Distinguishing number of the country which has granted/extended/
refused/withdrawn approval (see approval provisions in the Regulation).

2/ Strike out what does not apply.

8. Number of test report:
 9. Concise description:
 Category: (CR)
 10. Position of the approval mark:
 11. Reason(s) for extension (if applicable):
 12. Approval granted/refused, extended/withdrawn: 2/
 13. Place:
 14. Date:
 15. Signature:
 16. The list of documents deposited with the Administrative Service which has granted approval is annexed to this communication and may be obtained on request.
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Annex 2

SPECIAL HEADLAMPS FOR AGRICULTURAL OR FOREST TRACTORS
AND OTHER SLOW-MOVING VEHICLES

The provisions of this Regulation shall also apply to the approval of special headlamps for agricultural or forest tractors and other slow-moving vehicles, such headlamps being intended to provide both a driving beam and a passing beam and having a diameter D of less than 160 mm, 1/ with the following modifications:

(a) The minimum requirements for illumination laid down in paragraph 6.3 shall be reduced in the ratio

$$\left(\frac{D - 45}{160 - 45} \right)^2$$

subject to the following absolute lower limits:

3 lux at either point 75 R or point 75 L;

5 lux at either point 50 R or point 50 L;

1.5 lux in zone IV;

(b) Instead of the symbol CR provided for in paragraph 4.2.2.5 of the Regulation, the headlamp shall be marked with the letter M in a downward-pointing triangle;

(c) In the communication concerning approval, item 9 in annex 1 shall read: "Headlamp for slow-moving vehicles only".

1/ If the apparent surface of the reflector is not circular, the diameter shall be that of a circle with the same area as the apparent useful surface of the reflector.

Annex 3

VERIFICATION OF CONFORMITY OF PRODUCTION OF HEADLAMPS EMITTING
AN ASYMMETRICAL PASSING BEAM OR DRIVING BEAM OR BOTH

1. Headlamps bearing an approval mark shall conform to the approved type.
 2. Conformity shall be deemed satisfactory from a mechanical and geometrical standpoint if the discrepancies do not exceed inevitable manufacturing variations.
 3. As regards photometric performance, the conformity of headlamps of the series shall not be contested if, during photometric tests of any headlamp, selected at random and equipped with a standard (reference) filament lamp,
 - 3.1. none of the values measured deviates unfavourably by more than 20% from the prescribed value (for values B 50 R or L and zone III, the maximum unfavourable deviation may be 0.2 lux (B 50 R or L), or 0.3 lux (zone III);
 - 3.2. or if,
 - 3.2.1. for the passing beam, the prescribed values are met at HV (with a tolerance of 0.2 lux) and at least one point of the area delimited on the measuring screen (at 25 m) by a circle 15 cm in radius around points B 50 R or L (with a tolerance of 0.1 lux), 75 R or L, 50 R or L, 25 R or L, and in the entire area of zone IV which is not more than 22.5 cm above line 25 R and 25 L,
 - 3.2.2. and if, for the driving beam, HV being situated within the isolux 0.75 E_{max} , a tolerance of 20% is observed for the photometric values.
 4. If the results of the tests described in paragraph 3 above do not satisfy the requirements, the tests for the headlamp in question shall be repeated with another standard (reference) filament lamp.
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Annex 4

TESTS FOR STABILITY OF PHOTOMETRIC PERFORMANCE
OF HEADLAMPS IN OPERATION

Compliance with the requirements of this Regulation is not sufficient for the approval of headlamps incorporating lenses of plastic material.

TESTS ON COMPLETE HEADLAMPS

Once the photometric values have been measured according to the prescriptions of this Regulation, in points for $E_{\max}$ for driving beam and HV, 50R, B 50 L for passing beam (or HV, 50 L, B 50 R for headlamps designed for left-hand traffic) a complete headlamp sample shall be tested for stability of photometric performance in operation. "Complete headlamp" shall be understood to mean the complete lamp itself including those surrounding body parts and lamps which could influence its thermal dissipation.

1. TEST FOR STABILITY OF PHOTOMETRIC PERFORMANCE

The tests shall be carried out in a dry and still atmosphere at an ambient temperature of $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$, the complete headlamp being mounted on a base representing the correct installation on the vehicle.

1.1. Clean headlamp

The headlamp shall be operated for 12 hours as described in subparagraph 1.1.1. and checked as prescribed in subparagraph 1.1.2.

1.1.1. Test procedure

The headlamp shall be operated for the specified time so that:

- 1.1.1.1. (a) in the case where only one lighting function (driving or passing beam) is to be approved, the corresponding filament is lit for the prescribed time, 1/
- (b) in the case of a reciprocally incorporated passing lamp and driving lamp (dual filament lamp or two filament lamps):

If the applicant declares that the headlamp is to be used with a single filament lit 2/ at a time, the test shall be

1/ When the tested headlamp is grouped and/or reciprocally incorporated with signalling lamps, the latter shall be lit for the duration of the test. In the case of a direction indicator lamp, it shall be lit in flashing operation mode with an on/off time ratio of approximately one to one.

2/ Should two or more lamp filaments be simultaneously lit when headlamp flashing is used, this shall not be considered as being normal use of the filaments simultaneously.

carried out in accordance with this condition, activating 1/ each specified function successively for half the time specified in paragraph 1.1.;

In all other cases, 2/ 1/ the headlamp shall be subjected to the following cycle until the time specified is reached:

15 minutes, passing-beam filament lit
5 minutes, all filaments lit,

- (c) in the case of grouped lighting functions all the individual functions shall be lit simultaneously for the time specified for individual lighting functions (a) also taking into account the use of reciprocally incorporated lighting functions (b), according to the manufacturer's specifications.

1.1.1.2. Test voltage

The voltage shall be adjusted so as to supply a wattage 25% higher than the rated wattage specified in the Regulation for filament lamps (Regulation No. 37 in its original form) at a rated voltage of 6 V or 12 V, and 26% higher than the rated wattage for 24 V filament lamps.

The applied wattage shall in all cases comply with the corresponding value of a filament lamp of 12 V rated voltage, except if the applicant for approval specifies that the headlamp may be used at a different voltage. In the latter case, the test shall be carried out with the filament lamp whose wattage is the highest that can be used.

1.1.2. Test results

1.1.2.1. Visual inspection

Once the headlamp has been stabilized to the ambient temperature, the headlamp lens and the external lens, if any, shall be cleaned with a clean, damp cotton cloth. It shall then be inspected visually, no distortion, deformation, cracking or change in colour of either the headlamp lens or the external lens, if any, shall be noticeable.

1.1.2.2. Photometric test

To comply with the requirements of this Regulation, the photometric values shall be verified in the following points:

Passing beam:

50 R - B 50 L - HV for headlamps designed for right-hand traffic
50 L - B 50 R - HV for headlamps designed for left-hand traffic.

Driving beam:

Point of E_{max}

Another aiming may be carried out to allow for any deformation of the headlamp base due to heat (the change of the position of the cut-off line is covered in paragraph 2 of this annex). A 10% discrepancy between the photometric characteristics and the values measured prior to the test is permissible including the tolerances of the photometric procedure.

1.2. Dirty headlamp

After being tested as specified in subparagraph 1.1. above, the headlamp shall be operated for one hour as described in paragraph 1.1.1., after being prepared as prescribed in paragraph 1.2.1., and checked as prescribed in paragraph 1.1.2.

1.2.1. Preparation of the headlamp

1.2.1.1. Test mixture

The mixture of water and a polluting agent to be applied to the headlamp shall be composed of nine parts (by weight) of silica sand with a grain size distributed between 0 and 100 μm , one part (by weight) of vegetal carbon dust of a grain size distributed between 0 and 100 μm , 0.2 part (by weight) of NaCMC and an appropriate quantity of distilled water, the conductivity of which is lower than 1 mS/m for the purpose of this test.

The mixture must not be more than 14 days old.

1.2.1.2. Application of the test mixture to the headlamp

The test mixture shall be uniformly applied to the entire light emitting surface of the headlamp and then left to dry. This procedure shall be repeated until the illumination value has dropped to 15-20% of the values measured for each following point under the conditions described in this annex:

Point of E_{max} in driving beam photometric distribution for a driving/passing lamp.

Point of E_{max} in driving beam photometric distribution for a driving lamp only.

50 R and 50 V 3/ for a passing lamp only, designed for right-hand traffic.

50 L and 50 V 3/ for a passing lamp only, designed for left-hand traffic.

3/ 50 V is situated 375 mm below HV on the vertical line v-v on the screen at 25 m distance.

1.2.1.3. Measuring equipment

The measuring equipment shall be equivalent to that used during headlamp approval tests. A standard (reference) filament lamp shall be used for the photometric verification.

2. TEST FOR CHANGE IN VERTICAL POSITION OF THE CUT-OFF LINE UNDER THE INFLUENCE OF HEAT

This test consists of verifying that the vertical drift of the cut-off line under the influence of heat does not exceed a specified value for an operating passing lamp.

The headlamp tested in accordance with paragraph 1.1. of this annex shall be subjected to the test described in paragraph 2.1. of this annex without being removed from or readjusted in relation to its test fixture.

2.1. Test

The test shall be carried out in a dry and still atmosphere at an ambient temperature of $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$.

Using a mass production filament lamp which has been aged for at least one hour the headlamp shall be operated on passing beam without being dismounted from or readjusted in relation to its test fixture. (For the purpose of this test, the voltage shall be adjusted as specified in paragraph 1.1.1.2. of this annex). The position of the cut-off line in its horizontal part (between vv and the vertical line passing through point V 50 L for right-hand traffic or B 50 R for left-hand traffic) shall be verified 3 minutes (r_3) and 60 minutes (r_{60}) respectively after operation.

The measurement of the variation in the cut-off line position as described above shall be carried out by any method giving acceptable accuracy and reproducible results.

2.2. Test results

2.2.1. The result expressed in milliradians (mrad) shall be considered as acceptable when the absolute value $\Delta r_I = r_3 - r_{60}$ recorded on the headlamp is not more than 1.0 mrad ($\Delta r_I \leq 1.0 \text{ mrad}$).

2.2.2. However, if this value is more than 1.0 mrad but not more than 1.5 mrad ($1.0 \text{ mrad} < \Delta r_I \leq 1.5 \text{ mrad}$) a second headlamp shall be tested as described in paragraph 2.1 of this annex after being subjected three consecutive times to the cycle as described below,

in order to stabilize the position of mechanical parts of the headlamp on a base representative of the correct installation on the vehicle:

Operation of the passing lamp for one hour (the voltage shall be adjusted as specified in paragraph 1.1.1.2. above).

Period of rest for one hour.

The headlamp type shall be considered as acceptable if the mean value of the absolute values Δr_I measured on the first sample and Δr_{II} measured on the second sample is not more than 1.0 mrad

$$\left(\frac{\Delta r_I + \Delta r_{II}}{2} \leq 1.0 \text{ mrad} \right)$$

3. CONFORMITY OF PRODUCTION

One of the sampled headlamps shall be tested according to the procedure described in paragraph 2.1. above after being subjected three consecutive times to the cycle described in paragraph 2.2.2. above. The headlamp shall be considered as acceptable if r does not exceed 1.5 mrad.

If this value exceeds 1.5 mrad, but is not more than 2.0 mrad, a second headlamp shall be subjected to the test after which the mean of the absolute values recorded on both samples shall not exceed 1.5 mrad.

Annex 5

ARRANGEMENTS OF APPROVAL MARKS
(See paragraph 4 of this Regulation)

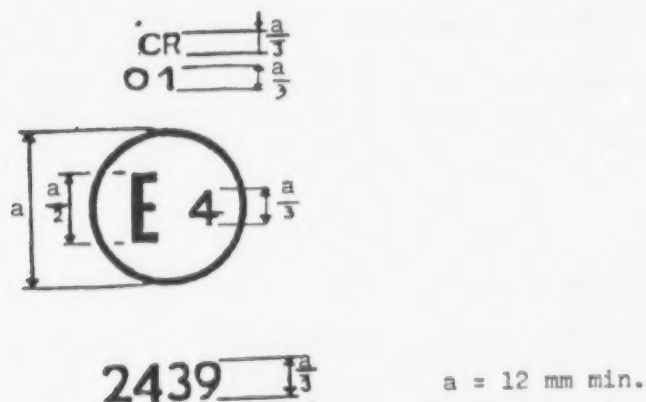


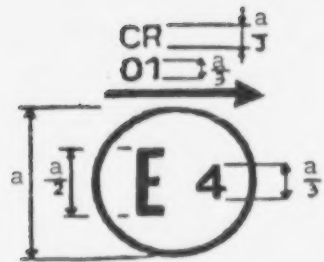
Figure 1

The headlamp bearing the approval marking shown above is a headlamp meeting the requirements of this Regulation in respect of both the driving beam and the passing beam, and which is designed for right-hand traffic only.

Note:

The approval number and the additional symbols shall be placed close to the circle and either above or below the letter "E", or to the right or left of that letter. The digits of the approval number shall be on the same side of the letter "E" and face the same direction.

The use of Roman numerals as approval numbers should be avoided so as to prevent any confusion with other symbols.



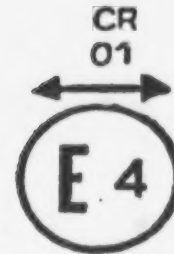
$a = 12 \text{ mm min.}$

2439 

Figure 2

The headlamp bearing the approval mark shown above is a headlamp meeting the requirements of this Regulation with respect to both the passing beam and the driving beam, and designed:

For left-hand traffic only.



2439

Figure 3

For both traffic systems, by means of an adjustment as desired of the optical unit or the lamp.

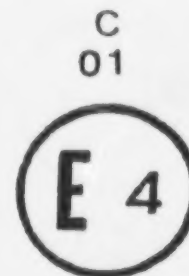


2439

Figure 4

The headlamp bearing the approval mark shown above is a headlamp meeting the requirements of this Regulation with respect to the passing beam only, and designed:

For both traffic systems.



2439

Figure 5

For right-hand traffic only.



Figure 6

The headlamp bearing the approval mark shown above is a headlamp meeting the requirements of this Regulation:

With respect to the passing beam only, and designed for left-hand traffic only.

R



Figure 7

With respect to the driving beam only.



Figure 8

Identification of a headlamp meeting the requirements of Regulation No. 1:

For both the passing beam and the driving beam and designed for right-hand traffic only.

the passing lamp filament shall not be lit simultaneously with the driving lamp filament and/or any other headlamp with which it is reciprocally incorporated.

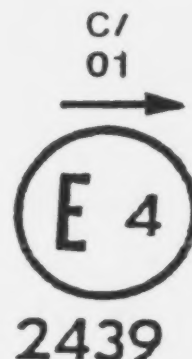


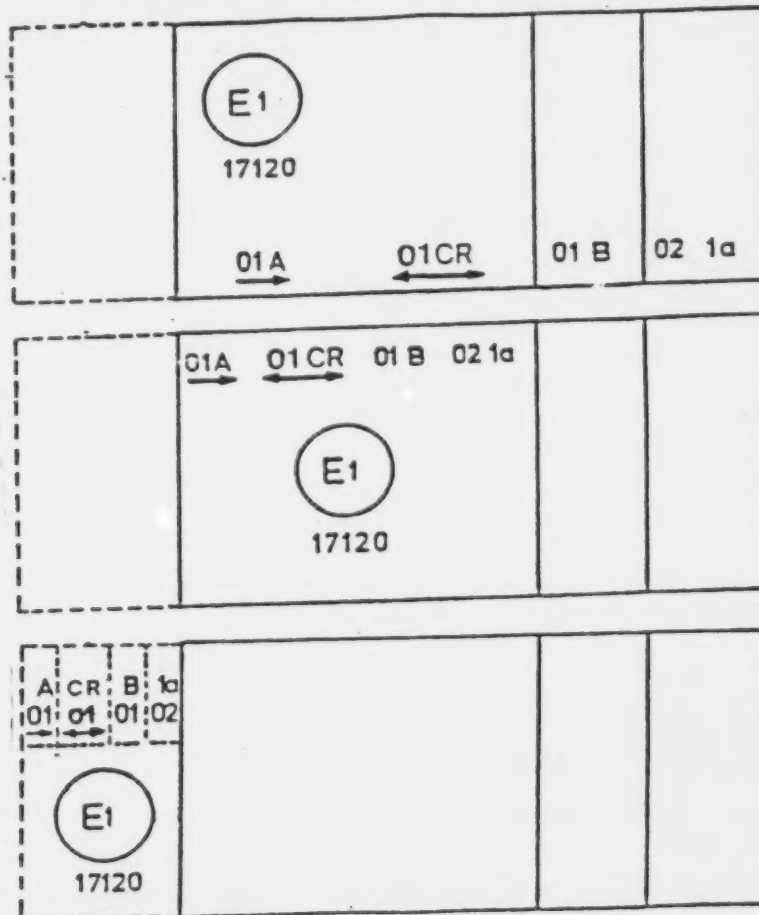
Figure 9

For the passing beam only and designed for left-hand traffic only.

Examples of possible markings for grouped lamps
situated on the front of a vehicle

Figure 10

The vertical and horizontal lines schematize the shape of the light-signalling device. These are not part of the approval mark.



Note: The three examples shown above correspond to a lighting device bearing an approval mark relating to:

A front position lamp approved in accordance with the 01 series of amendments to Regulation No. 7,

A headlamp with a passing beam designed for right-hand and left-hand traffic and a driving beam, approved in accordance with the 01 series of amendments to Regulation No. 1,

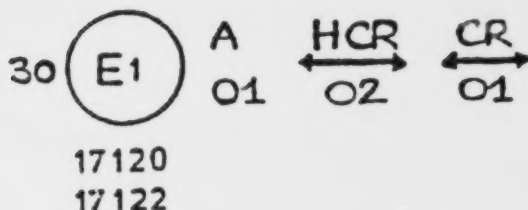
A front fog lamp approved in accordance with the 02 series of amendments to Regulation No. 19,

A front direction indicator lamp of category 1a approved in accordance with the 01 series of amendments to Regulation No. 6.

Figure 11

Lamp reciprocally incorporated with a headlamp

Example 1



The above example corresponds to the marking of a lens intended to be used in different types of headlamps, namely:

either: a headlamp with a passing beam designed for right-hand and left-hand traffic and a driving beam with a maximum intensity comprised between 86,250 and 101,250 candelas, approved in the Federal Republic of Germany (E1) in accordance with the requirements of Regulation No. 20 as amended by the 02 series of amendments,

which is reciprocally incorporated with

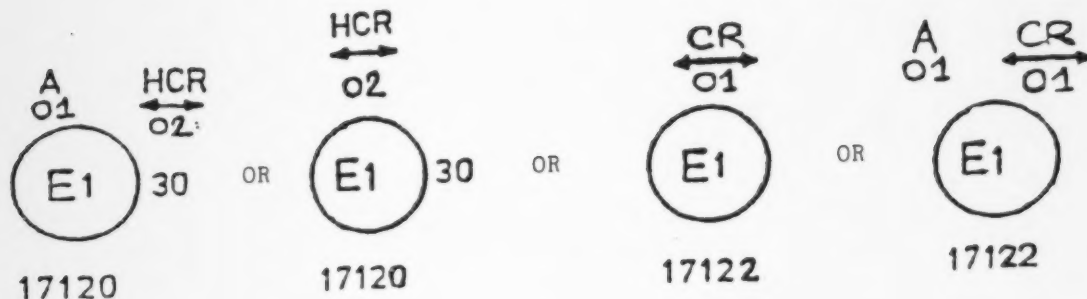
a front position lamp approved in accordance with the 01 series of amendments to Regulation No. 7;

or: a headlamp with a passing beam designed for right-hand and left-hand traffic and a driving beam, approved in the Federal Republic of Germany (E1) in accordance with the requirements of Regulation No. 1 as amended by the 01 series of amendments,

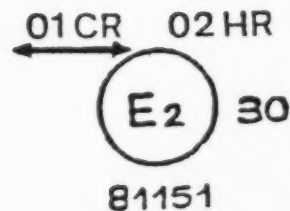
which is reciprocally incorporated with the same front position lamp as above;

or even: either of the above-mentioned headlamps approved as a single lamp.

The main body of the headlamp shall bear the only valid approval number, for instance:



Example 2

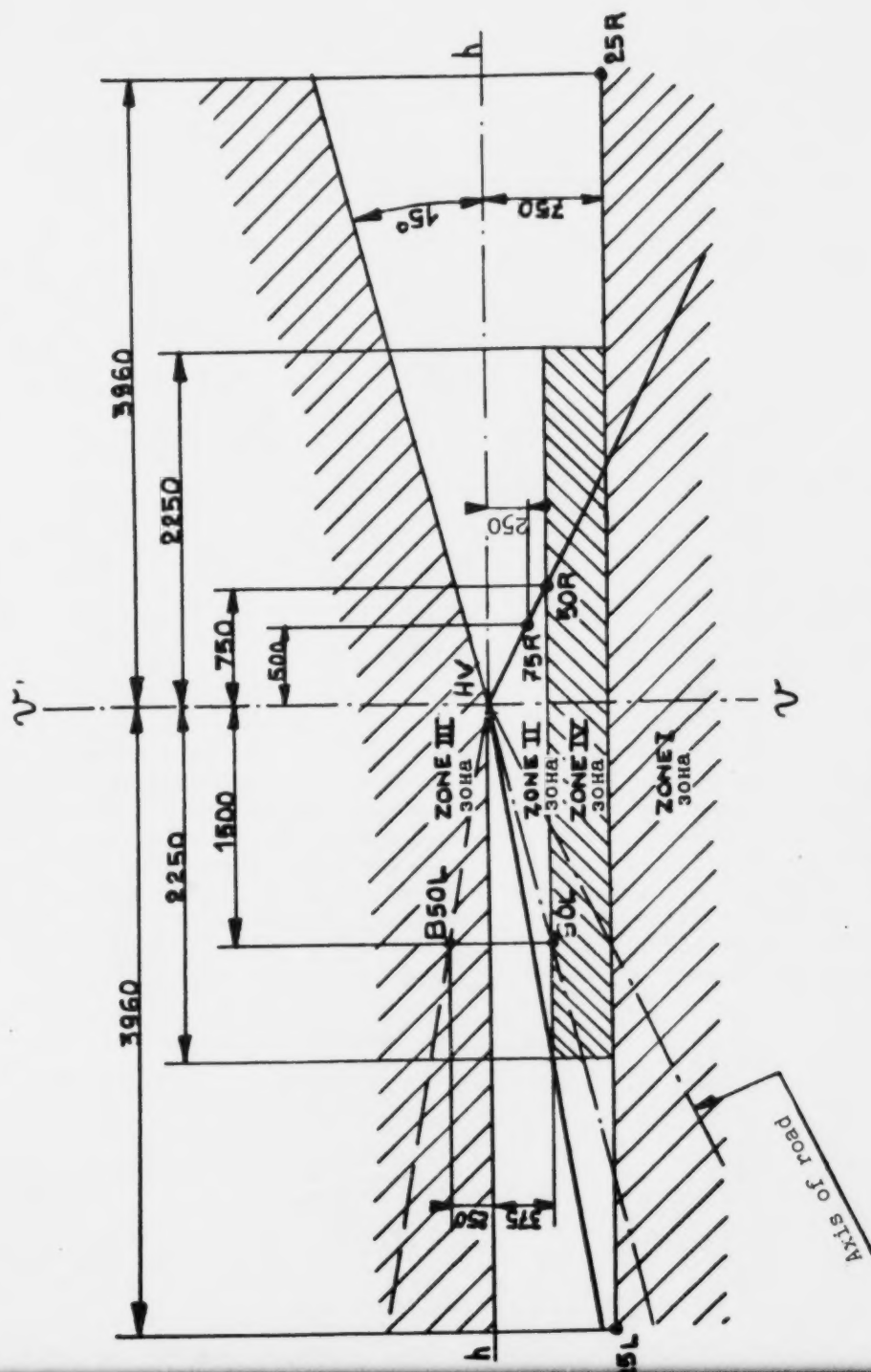


The above example corresponds to the marking of a lens used in an assembly of two headlamps approved in France (E2), consisting of a headlamp emitting a passing beam designed for both traffic systems and of a driving beam with a maximum intensity comprised between x and y candelas, meeting the requirements of Regulation No. 1, as amended by the 01 series of amendments and of a headlamp emitting a driving beam with a maximum intensity comprised between w and z candelas, meeting the requirements of Regulation No. 20, as amended by the 02 series of amendments the maximum intensity of all the driving beams being comprised between 86,250 and 101,250 candelas.

Annex 6

MEASURING SCREENS
Standard European Beam

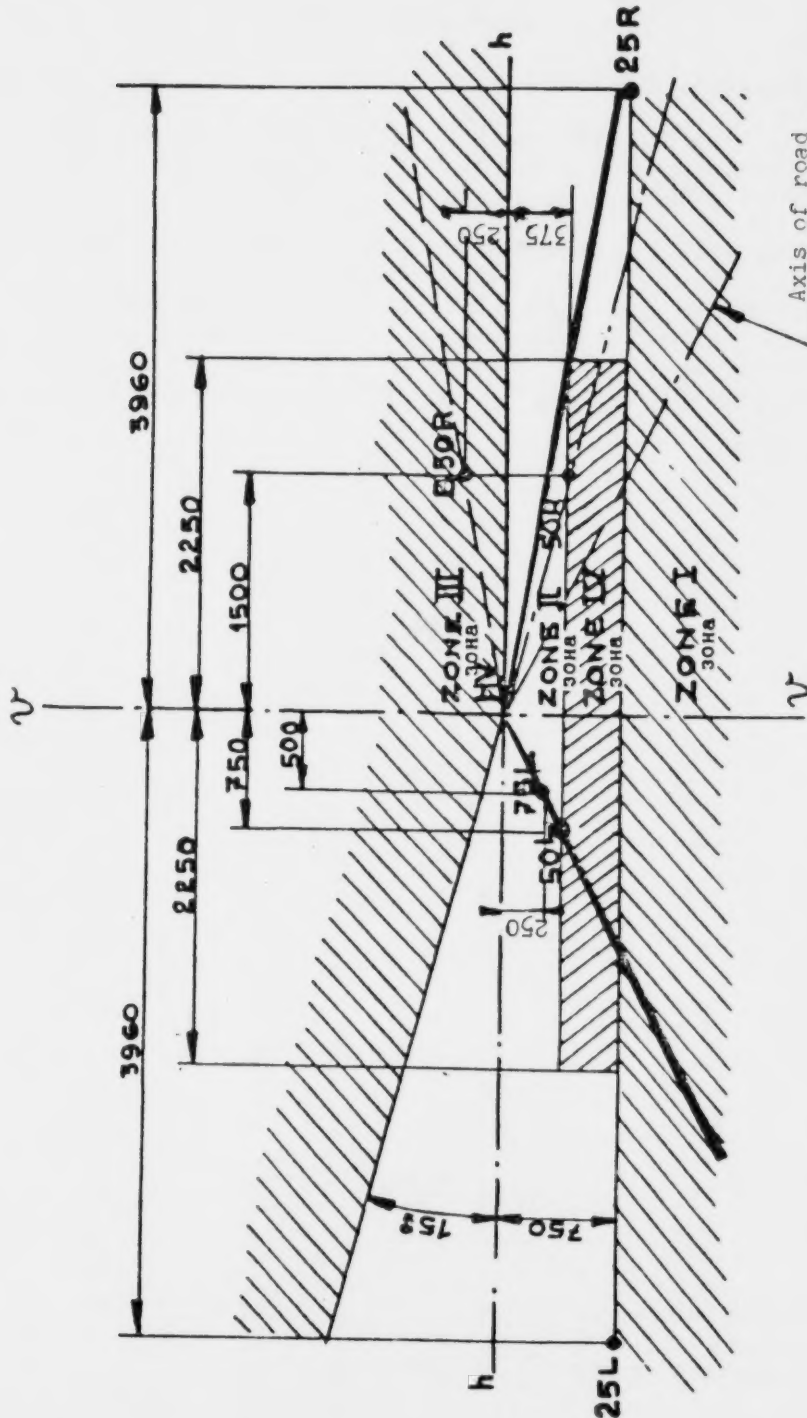
A. Headlamp for left-hand traffic
(Dimensions in mm)



h-h : horizontal plane) passing through
v-v : vertical plane) focus of headlamp

Standard European Beam

B. Headlamp for left-hand traffic
(Dimensions in mm)



h-h : horizontal plane)
v-v : vertical plane) passing through focus of headlamp

Regulation No. 2

UNIFORM PROVISIONS CONCERNING THE APPROVAL
OF INCANDESCENT ELECTRIC LAMPS FOR HEADLAMPS
EMITTING AN ASSYMMETRICAL PASSING BEAM OR
A DRIVING BEAM OR BOTH

1. Transitional provisions

- 1.1. No new type approval shall be granted under the Regulation after the date of entry into force of the 03 series of amendments 1/ (9 March 1986).
- 1.2. Type approvals granted before 9 March 1986 shall remain valid.
- 1.3. However, the Contracting Parties applying this Regulation may, from the date of entry into force of the 03 series of amendments, prohibit the fitting of category R₂ filament lamps approved under this Regulation if they do not meet the requirements of Regulation No. 37.

1/ The provisions applicable to the approval of incandescent filament lamps for headlamps emitting an asymmetrical passing beam or a driving beam or both are incorporated in Regulation No. 37.